ZOOSYSTEMATICA ROSSICA
ISSN 2410-0226 [online] 0320-9180 [print]
Zoological Institute, Russian Academy of Sciences, St Petersburg ▪ https://www.zin.ru/journals/zsr/
Vol. 29(2): 323–327 ▪ Published online 16 December 2020 ▪ DOI 10.31610/zsr/2020.29.2.323
RESEARCH ARTICLE

A new species of the genus *Cryptarcha* (Coleoptera: Nitidulidae) from Solomon Islands

Новый вид рода *Cryptarcha* (Coleoptera: Nitidulidae) с Соломоновых островов

A. Lasoń & A.G. Kirejtshuk*

А. Ласон, А.Г. Кирейчук*

Andrzej Lasoń, 4B/85 ul. Wiejska, 15–352 Białystok, Poland. E-mail: haptos@interia.pl

Alexander G. Kirejtshuk, Zoological Institute, Russian Academy of Sciences, 1 Universitetskaya emb., St Petersburg 1990343, Russia. E-mails: agk@zin.ru, kirejtshuk@gmail.com

Abstract. *Cryptarcha solomonensis* **sp. nov.** from Solomon Islands is described. This new species belongs to the *strigata*-group and is similar to *C. australis* Reitter, 1873, but distinct from it in the somewhat slenderer body with the yellow colouration on the elytra not reaching presutural parts in their anterior half, the longer and narrower aedeagus having one brush of hairs on the apex of the tegmen and in the different structure of its ovipositor. The diagnosis of the new species is compiled on the basis of comparison with other members of the *strigata*-group from Australia and adjacent islands.

Резюме. Описан *Cryptarcha solomonensis* **sp. nov.** с Соломоновых островов. Этот новый вид принадлежит к группе *strigata* и сходен с *C. australis* Reitter, 1873, отличаясь от него несколько более узким телом с желтой окраской на надкрыльях, не достигающей пришовных частей надкрылий в их передней половине, более длинным и узким эдеагусом с одним пучком волосков на вершине тегмена, а также другим строением яйцеклада. Диагноз нового вида составлен на основании его сравнения с другими представителями группы *strigata* из Австралии и ближайших островов.

Key words: sap beetles, species diagnosis, Australia and adjacent islands, Nitidulidae, *Cryptarcha*, new species

Ключевые слова: жуки-блестянки, диагноз вида, Австралия и прилегающие острова, Nitidulidae, *Cryptarcha*, новый вид

Zoobank Article LSID: urn:lsid:zoobank.org:pub:D00A70A9-9ED6-4485-8DAC-A79E19F0B4F5

Introduction

The genus *Cryptarcha* Shuckard, 1840 is nearly world-wide in distribution except prepolar territories and many islands, with maximum diversity in the modern fauna of Central and South America. This genus includes about 150 described species and has not been recorded from the Pacific insular areas including Hawaiian Archipelago (previously known only from islands along the eastern coast of Asia, Philippines, New Guinea and nearby islands, Australia, Tasmania and New Zealand: Kirejtshuk, 1987a, 1987b, 1992). This is the first record of *Cryptarcha* from the islands east of New Guinea.

**Corresponding author*

Material and methods

The senior author recognised the new species among specimens collected by Stanislav Jákl (Praha) and studied the type series after the standard ways of preparation, dissection and mounting of specimens. To study genitalia, specimens were relaxed in warm water and subsequently dissected under a stereomicroscope. Genitalia were rinsed with water, then transferred to propyl alcohol and embedded in a drop of Euparal on plastic board and placed on the same pin as the relevant specimen. All pictures were made using a Leica M125 stereomicroscope (with a Delta Optical DLT-Cam Pro 14 digital camera).

The following abbreviations are used for the depositories of the type specimens: ALBC, collection of Andrzej Lasoń, Białystok, Poland; NMP, National Museum, Prague, Czech Republic; USMB, Upper Silesian Museum, Bytom, Poland; ZIN, Zoological Institute, Russian Academy of Sciences, St Petersburg, Russia.

Taxonomy

Order **Coleoptera** Linnaeus, 1758

Family **Nitidulidae** Latreille, 1802

Subfamily **Cryptarchinae** Thomson, 1859

Genus ***Cryptarcha*** Shuckard, 1840

Type species: *Nitidula strigata* Fabricius, 1787

Cryptarcha solomonensis sp. nov.
(Figs 1–6)

Holotype. Male. "Solomon Islands, Honiara, 80–250 m, Guadalcanal ld.; Lunga river, 10 km S of Barana, 20.XI–15.XII.2013, Jákl S." (USMB).

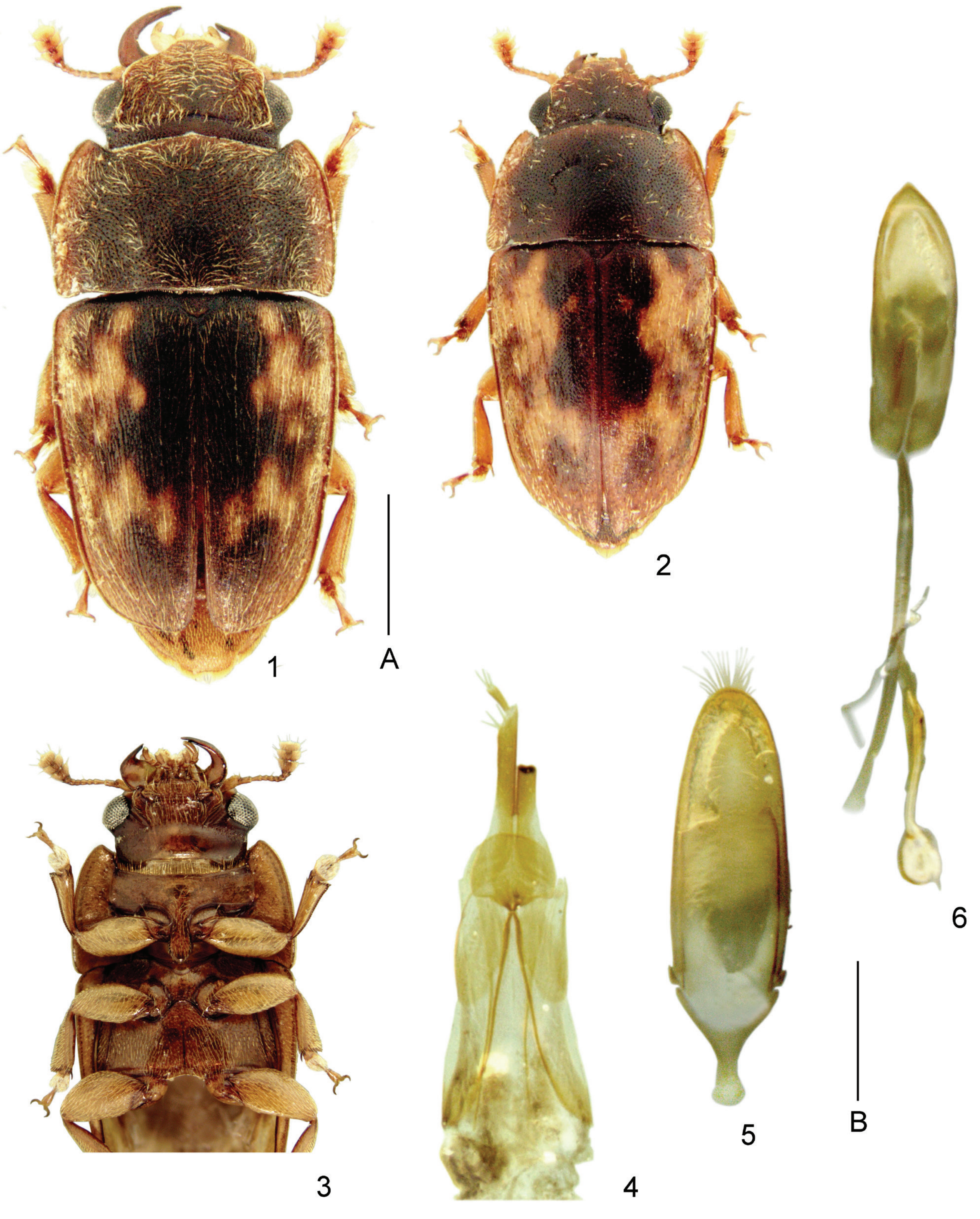
Paratypes. 3 males (ALBC, NMP, ZIN) and 1 female (ALBC) with the same labels as the holotype.

Description of male (holotype). Length 4.1, width 1.8, height 0.5 mm. Moderately convex dorsally and subdepressed ventrally; dorsum mat, dark brown with reddish spots on elytra and with lighter (up to reddish) anterior part of head, pronotal sides, exposed part of abdomen and appendages; underside bright reddish, moderately shining; dorsum with moderately dense and moderately conspicuous yellowish hairs on light parts and with dark hairs on dark parts; hairs markedly longer than distance between their roots and of two kinds: longer ones intermixed with shorter ones; longer hairs forming seven longitudinal rows on elytra; pygidium with rather short and conspicuous yellowish hairs; underside with finer, shorter and less conspicuous hairs than those on dorsum.

Head and pronotum with punctures, somewhat finer than eye facets, interspaces between them about one puncture diameter or greater, vaguely microreticulated to alutaceous. Elytra diffusely covered with rather dense punctures about as fine as those on head and pronotum, but somewhat dense, interspaces between punctures vaguely microreticulated to alutaceous. Surface of pygidium shagreened and dull, covered with short subrecumbent hairs. Ventrites with dense and shallow punctures, interspaces between punctures finely microreticulated to alutaceous. Thoracic underside sclerites with shallower and sparser punctures than those on dorsum, interspaces between punctures more or less smoothed and with slight shine.

Head about as long as distance between eyes, weakly and gently convex, its anterior edge subtruncate to shallowly emarginate; lobes over antennal insertions well raised. Mandibles strongly exposed from under frons and strongly asymmetric; left one markedly longer, thinner and more gently curved than right one; their apices with one weak subapical tooth.

Antennae comparatively short, about two-thirds as long as distance between eyes; their club three-segmented and comprising two-sevenths of total antennal length, elongate and more than one and half times as long as wide; antennomere 3 markedly shorter than scape and somewhat longer than antennomere 2 (pedicel). Pronotum widely transverse, rather convex, with evenly sloping sides to narrowly bordered lateral edges; anterior edge moderately bisinuate; sides about one-third as widely subexplanate as antennal club wide; anterior angles moderately projecting anteriorly; posterior edge bi-emarginate and narrowly bordered; posterior angles slightly projecting posteriorly. Elytra evenly vaulted on disk and moderately steeply sloping to very narrowly explanate sides, with adsutural lines visible in distal three-fifths; their apices oblique, separately rounded and forming small sutural angle. Scutellum somewhat transverse, subsemicircular and with rounded apex.



Figs 1–6. *Cryptarcha solomonensis* **sp. nov.**, holotype (1), and paratypes (2–6). **1**, body with appendages (male); **2,** same (female); **3**, anterior part of body with appendages (male); **4**, ovipositor; **5**, tegmen; **6**, penis trunk with apodeme and sclerite of inner sac. Dorsal view (1, 2, 6), ventral view (3–5). Scale bars: A = 1.0 mm (1–3), B = 0.2 mm (4–6).

Pygidium transverse, its surface subflattened at subtruncate to shallowly emarginate apex.

Antennal grooves distinctly outlined, subrectilinearly and strongly convergent behind mentum. Gular processes comparatively wide and rather strongly curved. Mentum subhexagonal, more than four times as wide as long. Terminal maxillary palpomere subcylindrical and about three and half times as long as wide. Terminal labial palpomere subcylindrical and about twice as long as wide. Prostenal process almost flat and slightly widened before widely rounded and finely bordered apex. Distance between mesocoxae one and half times and that between metacoxae about three times as great as distance between procoxae. Mesoventrite flat in distal half and flatly sloping under prosternal process. Metaventrite medially subflattened, with clear discrimen in distal two-thirds; its posterior edge between metacoxae rather shallowly emarginate. Postcoxal lines behind meso- and metacoxal cavities following closely posterior edge of coxal cavities. Male anal sclerite slightly exposed from under ultimate abdominal segment. Epipleura at base somewhat wider than antennal club and moderately elevated outwards.

Tibiae subtriangular and slightly narrower than antennal club, protibia with moderately projecting outer subapical angles, meso- and metatibiae with dense rows of short setae at outer edge, spur moderately long and moderately thin. Femora of usual shape and with evenly convex anterior and posterior edges; profemur about twice, mesofemur two and one third, metafemur nearly three times as wide as corresponding tibiae. Tarsi moderately lobed, about a half as wide as corresponding tibiae, with moderately long simple claws.

Aedeagus moderately sclerotised, moderately long (0.5 mm) and not curved. Penis trunk with subacute apex and very long apical orifice; lobes of orifice about a half as long as entire length of penis trunk. Tegmen somewhat longer than penis trunk and bearing long setae at apex.

Female. Sexual dimorphism is expressed in the less asymmetric development of the mandibles and elytral apices slightly projecting and subacute (but not separately rounded as in males). The female protarsi are somewhat narrower than those in males. The ovipositor is moderately sclerotised and moderately long (0.75 mm).

Variation. Length 3.2–4.1 mm. Some variability is observed in the colouration and particularly in outlines of yellow spots on elytra, and also in the sculpture on integument (punctation and reticulation).

Diagnosis. Cryptarcha solomonensis **sp. nov.** belongs to the *strigata*-group (Kirejtshuk, 1987b), which is characterised by light zigzag pattern on elytra. The new species is similar to *C. australis* Reitter, 1873 (widely distributed in Australia and Tasmania), but distinct from it in the somewhat slenderer body with the yellow colouration on the elytra not reaching presutural parts in their anterior half, the longer and narrower aedeagus having a brush of setae at the apex of the tegmen (but not a pair of paramedian brushes at the apex of the tegmen as characteristic of *C. australis*) and the different structure of its ovipositor. From other species of the *strigata*-group, *C. solomonensis* **sp. nov.** is distinguished by the well expressed pubescence and less shining body integument, different pattern of the yellow colouration on the elytra and peculiar structure of the aedeagus. It additionally differs from species of this group in the following characters: from *C. elleipsis* Kirejtshuk, 1987 (Australia: Queensland), in the larger body, finer dorsal punctation, wider prosternal process somewhat widened apically, mentum with the anterior angles not projecting anteriorly and elytral epipleura not sloping downwards; from *C. minima* (Sharp, 1886) (New Zealand), in the shorter adsutural elytral lines (reaching only about the elytral midlength), pronotal and elytral sides not narrowly explanate, and pygidium mostly covered by the elytral apices; from *C. nitida* Reitter, 1877 (South Australia), in the somewhat wider body with finer and sparser dorsal punctation, absence of the basal border of pronotum, longer adsutural lines on elytra, and elytral epipleura not sloping downwards; from *C. nitidissima* Reitter, 1873 (Australia: Queensland and New South Wales), in the markedly slenderer, larger and not very convex body with much denser dorsal punctation, longer adsutural elytral lines, and narrower antennal club; from *C. subnitida* Kirejtshuk 1987 (widespread in Australia), in the body not regularly ellipsoid and with denser dorsal punctation, pronotal and elytral sides not narrowly explanate, and also in the elytral apices

Zoosystematica Rossica, Vol. 29, No. 2, pp. 323–327

of both sexes not so extended and leaving pygidial apex somewhat exposed.

Etymology. The species name is formed from the name of the type locality (Solomon Islands).

Discussion

The discovery of the genus *Cryptarcha* in Solomon Islands shows that our knowledge of its distribution is far from complete. The *strigata* group seems to be rather archaic and ancient one because of its wide distribution in the Eastern Hemisphere and Nearctic. The oldest probable member of this genus was described in the Paleocene French outcrop of Menat (Kirejtshuk & Nel, 2018), and also some probable congeners from the Upper Eocene Baltic amber are waiting for description (Klebs, 1910; Bachofen-Echt, 1949; Kirejtshuk, unpublished data).

Acknowledgements

The authors greatly appreciate to Polina A. Kirejtshuk, daughter of one of the authors for her help in cleaning of the pictures of the new species. The studies of the second author were partly carried out in the framework of the Russian State research project No. AAAA-A19-119020690101-6, programme of the Presidium of the Russian Academy of Sciences “Evolution of the organic world. Significance and influence of planetary processes”, and Russian Foundation for Basic Research (grant No. 18-04-00243-a and 19-04-00465-a).

The authors appreciate the very useful comments and suggestions by John Lawrence (CSIRO National Collections, Canberra, Australia), Sadatomo Hisamatsu (Ehime Prefectural Institute of Public Health and Environmental Science, Matsuyama City, Japan), and one anonymous reviewer.

References

Bachofen-Echt A. 1949. *Der Bernstein und seine Einschlüsse*. Wien: Springer Verlag. 204 + 1 Taf.

Kirejtshuk A.G. 1987a. Review of sap beetles of the subfam. Cryptarchinae (Coleoptera, Nitidulidae) of the Indo-Malayan Region. *Proceedings of the Zoological institute of the USSR Academy of Sciences*, **170**: 62–95. (In Russian).

Kirejtshuk A.G. 1987b. New genera and species of sap beetles (Coleoptera, Nitidulidae) from the Australian Region. II. *Entomologicheskoe Obozrenie*, **66**(4): 773–799. (In Russian).

Kirejtshuk A.G. 1992. Fam. sap beetles—Nitidulidae. *In:* **Lehr P.A.** (Ed.). *Opredelitel' nasekomykh Dal'nego Vostoka SSSR* [Key to the insects of the Far East of the USSR], **3**(2): 114–209. Saint Petersburg: Nauka. (In Russian).

Kirejtshuk A.G. & Nel A. 2018. Nitidulidae (Coleoptera) from the Paleocene of Menat (France). Zootaxa, **4402**(1): 001–041. https://doi.org/10.11646/zootaxa.4402.1.1

Klebs R. 1910. Über Bernsteineinschlüsse im allgemeinen und die Coleopteren meiner Bernsteinsammlung. *Schriften der Physikalisch-ökonomischen Gesellschaft zu Königsberg*, **51**: 217–242.

Received 21 October 2020 / Accepted 6 December 2020. Editorial responsibility: B.M. Kataev